

AMENDMENTS

Please amend the claims as follows.

1. **(Currently Amended)** An apparatus ~~Apparatus~~ for generating a mist comprising:

a conduit having ~~a mixing chamber and an exit;~~

a transport nozzle in fluid communication with the said conduit, the transport nozzle being adapted to ~~introduce~~ spray a transport fluid ~~into the mixing chamber;~~

a working nozzle positioned adjacent to the transport nozzle ~~intermediate the transport nozzle and the exit,~~ the working nozzle being adapted to ~~introduce~~ spray a working fluid ~~into the mixing chamber;~~

wherein ~~characterised in that~~ the transport nozzle includes a convergent-divergent portion therein ~~such as in use to provide for the generation of high velocity flow of the transport fluid; and~~

~~wherein the transport and working nozzles have a relative angular orientation such that in use the working fluid is atomised and a dispersed droplet flow regime of droplets having a substantially uniform size is created in the mixing chamber by the introduction of transport fluid flow from the transport nozzle into working fluid flow from the working nozzle and the subsequent shearing of the working fluid by the transport fluid~~

wherein the transport nozzle has an inner surface and an outer surface, each being substantially frustoconical in shape; and

wherein the transport nozzle is shaped such that the transport fluid sprayed from the transport nozzle has a divergent flow pattern.

2. **(Currently Amended)** The apparatus of claim 1, wherein the ~~transport and/or~~ working nozzle substantially circumscribes the conduit.
3. **(Currently Amended)** The apparatus of claim 1, wherein the ~~an~~ angular orientation and internal geometry of the transport and working nozzles is are such that ~~the size~~ a substantial portion of the working fluid droplets have a size that is less than 50 μm .
4. **(Currently Amended)** The apparatus of claim 1, wherein the conduit comprises a mixing chamber, wherein ~~includes a converging portion~~ the transport nozzle is adapted to introduce the transport fluid into the mixing chamber and the working nozzle is adapted to introduce the working fluid into the mixing chamber.
5. **(Currently Amended)** The apparatus of claim 4 ~~4~~, wherein the mixing chamber includes a diverging portion.
6. **(Currently Amended)** The apparatus of claim 1, wherein the ~~apparatus includes a second transport nozzle being adapted to introduce further transport fluid or a second transport fluid into the mixing chamber~~ transport and working nozzles have a relative angular orientation such that in use the working fluid is atomized and a dispersed droplet flow regime of droplets having a substantially uniform size is created by the introduction of transport fluid flow from the transport nozzle into working fluid flow from the working nozzle and the subsequent shearing of the working fluid by the transport fluid.
7. **(Currently Amended)** The apparatus of claim 7 ~~1~~, wherein the ~~second transport nozzle is positioned nearer to the exit than the working nozzle, such that the working nozzle is intermediate both transport nozzles~~ the transport nozzle and the exit.

8. **(Currently Amended)** The apparatus of claim 1, wherein the mixing chamber includes ~~an inlet adapted to introduce an inlet fluid into the mixing chamber, the inlet being distal from the exit, the transport and working nozzles being arranged intermediate the inlet and exit~~ inner surface of the transport nozzle is formed by an outer surface of a protrusion, wherein the protrusion is disposed within the conduit.

9. **(Currently Amended)** The apparatus of claim 1, wherein the apparatus includes a ~~supplementary nozzle transport plenum arranged inside the transport nozzle and adapted to introduce further transport fluid or a second transport fluid into the mixing chamber~~ conduit and proximal to the transport nozzle.

10. **(Currently Amended)** The apparatus of claim 9, wherein the supplementary ~~nozzle is~~ transport plenum and the transport nozzle are arranged axially in the mixing chamber apparatus.

11. **(Currently Amended)** The apparatus of claim 9, further comprising a transport fluid inlet wherein the supplementary nozzle extends forward of the transport nozzle transport fluid inlet, transport plenum, and the transport nozzle are arranged axially in the apparatus.

12. **(Currently Amended)** The apparatus of claim 9 1, wherein the supplementary transport nozzle is shaped with a convergent-divergent profile to provide supersonic flow of the transport fluid which flows therethrough.

13. **(Canceled)**

14. **(Currently Amended)** The apparatus of claim 13, ~~wherein the transport nozzle has inner and outer surfaces each being substantially frustoconical in shape. 1, further comprising a working fluid plenum that substantially circumscribes the conduit.~~

15. **(Currently Amended)** The apparatus of claim 1, wherein the working nozzle is shaped such that working fluid ~~introduced into the mixing chamber through~~ sprayed from the working nozzle has a convergent or divergent flow pattern.

16. **(Original)** The apparatus of claim 15, wherein the working nozzle has inner and outer surfaces each being substantially frustoconical in shape.

17. **(Currently Amended)** The apparatus of claim 1, ~~further including control means adapted to control one or more of droplet size, droplet distribution, spray cone angle and projection distance~~ wherein the working nozzle substantially circumscribes the transport nozzle.

18. **Currently Amended)** The apparatus of claim 1, ~~further including control means to control one or more of the flow rate, pressure, velocity, quality, and temperature of the working or transport fluids~~ 14 wherein the working fluid plenum substantially circumscribes the transport nozzle.

19. **(Currently Amended)** The apparatus of claim 17, ~~wherein the control means includes means to control the angular orientation and internal geometry of the transport and working nozzles~~ 8 wherein the working nozzle substantially circumscribes the protrusion.

20. **(Currently Amended)** The apparatus of claim 17, ~~wherein the control means includes means to control the internal geometry of at least part of the mixing chamber or exit to vary it between convergent and divergent~~ 8 wherein the working fluid plenum substantially circumscribes the protrusion.

21. **(Currently Amended)** The apparatus of claim 1, wherein the internal geometry of the transport nozzles has an area ratio, namely exit area to throat area ratio, in the range of 1.75 to 15, ~~having an included angle alpha substantially equal to or less than 6 degrees for supersonic flow and substantially equal to or less than 12 degrees for sub-sonic flow.~~

22. **(Currently Amended)** The apparatus of claim 1, wherein the transport nozzle is ~~oriented at an angle .beta. of between 0 to 30 degrees~~ has an included angle alpha (α) that is equal to or less than 6 degrees.

23. **(Currently Amended)** The apparatus of claim 4 4, wherein the mixing chamber is closed upstream of the transport nozzle.

24. **(Currently Amended)** The apparatus of claim 1, wherein the ~~exit of the apparatus is provided with a cowl to control the mist~~ transport nozzle has an included angle alpha (α) that is equal to or less than 12 degrees.

25 - 28. **(Canceled)**

29. **(Currently Amended)** A spray system comprising the apparatus of claim 1 and further including a steam generator and a water supply, wherein the transport fluid in the form of is steam and the working fluid is water.

30. **(Currently Amended)** ~~The spray system of claim 29, further including working fluid in the form of water~~ A method of suppressing a fire comprising using the apparatus of claim 1 to spray water droplets on the fire.

31 - 51. **(Canceled)**

52. **(New)** An apparatus for generating a mist comprising:

a housing having a plurality of interior walls, at least one of the plurality of interior walls defining a passageway along a longitudinal center axis, the passageway having an inlet, a plenum adjacent to the inlet, and a portion adjacent to the plenum, the at least one of the plurality of interior walls being tapered outwardly with respect to the axis along the portion;

a protrusion with a solid interior located proximate the portion, the protrusion having an outer surface tapered outwardly with respect to the axis;

a transport nozzle defined between:

the at least one of the plurality of interior walls tapered outwardly with respect to the axis along the portion, and

the outer surface tapered outwardly of the protrusion;

a working nozzle being defined by other of the plurality of interior walls of the housing, the working nozzle being coincident the transport nozzle so that a working fluid communicated to the working nozzle mixes with a transport fluid exiting the transport nozzle; and

a working fluid inlet disposed along the housing in communication with the working nozzle.

53. **(New)** The apparatus of claim 52 further comprising a chamber adjacent the portion wherein the transport nozzle exits into the chamber and the working nozzle exits into the chamber so that the working fluid communicated to the working nozzle mixes in the chamber with the transport fluid exiting the transport nozzle.

54. **(New)** An apparatus for generating a mist comprising:

a first fluid passage having a first fluid inlet and a first fluid outlet; the first fluid passage defining a working nozzle with a convergent flow pattern;

a second fluid passage having a second fluid inlet and a second fluid outlet;

a protrusion located in the second fluid passage to define a transport nozzle with inner and outer surfaces substantially frustroconical in shape and having a divergent flow pattern.